

Product	Size	Energy conservation standard ^a (products manufactured on and after October 29, 2003) ^b	
		Minimum thermal efficiency	Maximum standby loss ^c
Electric storage water heaters.	All	N/A	$0.30 + 27/V_m$ (%/hr)
Gas-fired storage water heaters.	≤155,000 Btu/hr ...	80%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)
	>155,000 Btu/hr ...	80%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)
Oil-fired storage water heaters.	≤155,000 Btu/hr ...	78%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)
	>155,000 Btu/hr ...	78%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)
Gas-fired instantaneous water heaters and hot water supply boilers.	<10 gal	80%	N/A
	≥10 gal	80%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)
Oil-fired instantaneous water heaters and hot water supply boilers.	<10 gal	80%	N/A
	≥10 gal	78%	$Q/800 + 110(V_r)^{1/2}$ (Btu/hr)
Product	Size	Minimum thermal insulation	
Unfired hot water storage tank.	All	R–12.5	

^a V_m is the measured storage volume and V_r is the rated volume, both in gallons. Q is the nameplate input rate in Btu/hr.
^b For hot water supply boilers with a capacity of less than 10 gallons: (1) the standards are mandatory for products manufactured on and after October 21, 2005, and (2) products manufactured prior to that date, and on or after October 23, 2003, must meet either the standards listed in this table or the applicable standards in subpart E of this part for a “commercial packaged boiler.”
^c Water heaters and hot water supply boilers having more than 140 gallons of storage capacity need not meet the standby loss requirement if (1) the tank surface area is thermally insulated to R–12.5 or more, (2) a standing pilot light is not used and (3) for gas or oil-fired storage water heaters, they have a fire damper or fan assisted combustion.

[69 FR 61983, Oct. 21, 2004; 69 FR 63574, Nov. 2, 2004]

Subpart H—Automatic Commercial Ice Makers

SOURCE: 70 FR 60415, Oct. 18, 2005, unless otherwise noted.

§ 431.131 Purpose and scope.

This subpart contains energy conservation requirements for commercial ice makers, pursuant to Part C of Title III of the Energy Policy and Conservation Act, as amended, 42 U.S.C. 6311–6317.

§ 431.132 Definitions concerning automatic commercial ice makers.

Automatic commercial ice maker means a factory-made assembly (not necessarily shipped in 1 package) that—

(1) Consists of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting ice; and

(2) May include means for storing ice, dispensing ice, or storing and dispensing ice.

Basic model means all units of a given type of covered product (or class thereof) manufactured by one manufacturer, having the same primary energy source, and which have essentially

identical electrical, physical, and functional (or hydraulic) characteristics that affect energy consumption, energy efficiency, water consumption, or water efficiency.

Batch type ice maker means an ice maker having alternate freezing and harvesting periods. This includes automatic commercial ice makers that produce cube type ice and other batch technologies. Referred to as cubes type ice maker in AHRI 810 (incorporated by reference, see § 431.133).

Continuous type ice maker means an ice maker that continually freezes and harvests ice at the same time.

Cube type ice means ice that is fairly uniform, hard, solid, usually clear, and generally weighs less than two ounces (60 grams) per piece, as distinguished from flake, crushed, or fragmented ice. Note that this conflicts and takes precedence over the definition established in AHRI 810 (incorporated by reference, see § 431.133), which indicates that “cube” does not reference a specific size or shape.

Energy use means the total energy consumed, stated in kilowatt hours per one-hundred pounds (kWh/100 lb) of ice stated in multiples of 0.1. For remote

condensing (but not remote compressor) automatic commercial ice makers and remote condensing and remote compressor automatic commercial ice makers, total energy consumed shall include the energy use of the ice-making mechanism, the compressor, and the remote condenser or condensing unit.

Harvest rate means the amount of ice (at 32 degrees F) in pounds produced per 24 hours.

Ice hardness factor means the latent heat capacity of harvested ice, in British thermal units per pound of ice (Btu/lb), divided by 144 Btu/lb, expressed as a percent.

Ice-making head means automatic commercial ice makers that do not contain integral storage bins, but are generally designed to accommodate a variety of bin capacities. Storage bins entail additional energy use not included in the reported energy consumption figures for these units.

Maximum condenser water use means the maximum amount of water used by the condensing unit (if water-cooled), stated in gallons per 100 pounds (gal/100 lb) of ice, in multiples of 1.

Remote compressor means a type of automatic commercial ice maker in which the ice-making mechanism and compressor are in separate sections.

Remote condensing means a type of automatic commercial ice maker in which the ice-making mechanism and condenser or condensing unit are in separate sections.

Self-contained means a type of automatic commercial ice maker in which the ice-making mechanism and storage compartment are in an integral cabinet.

[70 FR 60415, Oct. 18, 2005, as amended at 71 FR 71371, Dec. 8, 2006; 76 FR 12503, Mar. 7, 2011; 77 FR 1613, Jan. 11, 2012]

TEST PROCEDURES

§ 431.133 Materials incorporated by reference.

(a) *General.* We incorporate by reference the following standards into Subpart H of Part 431. The material listed has been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Any

subsequent amendment to a standard by the standard-setting organization will not affect the DOE regulations unless and until amended by DOE. Material is incorporated as it exists on the date of the approval and a notice of any change in the material will be published in the FEDERAL REGISTER. All approved material is available for inspection at the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, 6th Floor, 950 L'Enfant Plaza SW., Washington, DC 20024, (202) 586-2945, or go to: http://www1.eere.energy.gov/buildings/appliance_standards/. Also, this material is available for inspection at National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030 or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. Standards can be obtained from the sources listed below.

(b) *AHRI.* Air-Conditioning, Heating, and Refrigeration Institute, 2111 Wilson Blvd., Suite 500, Arlington, VA 22201, (703) 524-8800, ahri@ahrinet.org, or <http://www.ahrinet.org>.

(1) AHRI Standard 810-2007 with Addendum 1, ("AHRI 810"), *Performance Rating of Automatic Commercial Ice-Makers*, March 2011; IBR approved for §§ 431.132 and 431.134.

(2) [Reserved]

(c) *ASHRAE.* American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 1791 Tullie Circle NE., Atlanta, GA 30329, (404) 636-8400, ashrae@ashrae.org, or <http://www.ashrae.org>.

(1) ANSI/ASHRAE Standard 29-2009, ("ANSI/ASHRAE 29"), *Method of Testing Automatic Ice Makers*, (including Errata Sheets issued April 8, 2010 and April 21, 2010), approved January 28, 2009; IBR approved for § 431.134.

(2) [Reserved]

[77 FR 1613, Jan. 11, 2012]